

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-3 (canceled)

4. (previously presented) A magnetic recording and reading device having a data transfer rate of more than 50 MB/s and a recording density of more than 5 Gb/in², which comprises:

a magnetic recording medium having a substrate and a magnetic layer formed on the substrate;

a magnetic head comprising a recording head having a magnetic core with a magnetic core length l_1 of not more than 35 μm and having a resistivity of more than $50\mu\Omega\text{cm}$, and a reading head provided with a read element having a track width of not more than 0.9 μm ; and

a R/W-IC;

wherein the magnetic layer contains (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Td, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B, said at least one element selected from the third group being in an amount of 0.1 to 15 atomic %.

Claim 5 (canceled)

6. (previously presented) A magnetic recording and reading device according to claim 4, wherein the R/W-IC has a line width of not more than 0.35 μm .

7. (previously presented) A magnetic recording and reading device according to claim 10, wherein the recording head has a magnetic pole length l_2 of not more than 50 μm .

8. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic layer contains amorphous material.

9. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element selected from the group consisting of Ru, Pt, Cr, Mo, W, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

10. (previously presented) A magnetic recording and reading device according to claim 4, wherein said magnetic recording medium has a perpendicular anisotropy magnetic recording layer.

11. (previously presented) A magnetic recording and reading device according to claim 4, wherein said perpendicular anisotropy magnetic recording layer has a granular structure.

12. (previously presented) A magnetic recording and reading device according to claim 4, wherein said magnetic recording medium is a magnetic disk which is rotatable at a speed in a range of more than 10,000 rpm.

13. (previously presented) A magnetic recording and reading device according to claim 4, wherein a magnetic pole of said magnetic core is composed of any one material selected from the group consisting of a NiFe-base alloy and an amorphous alloy, said NiFe-base alloy including 42Ni-57Fe-1Cr, 46Ni-52Fe-2Cr, 43Ni-56Fe-1Mo, 51Ni-47Fe-2S and 54Ni-43Fe-3P, and said amorphous alloy includes CoTaZr and CoNbZr.

14. (new) A magnetic recording and reading device comprising:
a magnetic recording medium having a substrate and a thin magnetic layer formed on the substrate;
a magnetic head having a recording head; and
a R/W-IC;
wherein the recording head has an upper magnetic core and a lower magnetic core with a magnetic core length l_1 of not more than 35 μ m;
said reading head has a read element having a track width of not more than 0.9 μ m;
said thin magnetic layer includes a magnetic crystal grains containing (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu,

Gd, Td, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B, said at least one element selected from the third group being in an amount of 0.1 to 15 atomic %;

a data transfer rate of the device is more than 50MB/s, and a recording density is more than 5GB/in².

15. (new) A magnetic recording and reading device according to claim 14, wherein said l_1 is a length between an air-bearing surface of the magnetic core and a connection which connects the upper magnetic core with the lower magnetic core.

16. (new) A magnetic recording and reading device according to claim 14, wherein said RW-IC has a line width of not more than 0.35 μ m.

17. (new) A magnetic recording and reading device according to claim 14, wherein said magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element selected from the group consisting of Cr, Mo, W, Ta, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

18. (new) A magnetic recording and reading device comprises:
a magnetic recording medium having a substrate and a thin magnetic layer formed above the substrate;

a magnetic head having a recording head and a reading head; and

a RW-IC;

wherein said recording head has an upper magnetic core and a lower magnetic core with a magnetic core length l_1 is not more than 35 μ m;

wherein said reading head has a read element having a track width of not more than $0.9\mu\text{m}$;

wherein an absolute value of normalized noise coefficient per recording density of the magnetic recording medium is not more than $2.5 \times 10^{-8} (\mu\text{Vrms})(\text{inch})^{0.5}/(\mu\text{Vpp})$; and

wherein a data transfer rate of the device is more than 50MB/s, and a recording density is more than 5GB/in².

19. (new) A magnetic recording and reading device according to claim 18, wherein said RW-IC has a line width of not more than $0.35\mu\text{m}$.

20. (new) A magnetic recording and reading device according to claim 18, wherein said thin magnetic layer includes magnetic crystal grains.

21. (new) A magnetic recording and reading device according to claim 18, wherein said thin magnetic layer includes amorphous magnetic material.

22. (new) A magnetic recording and reading device according to claim 18, wherein said thin magnetic recording layer is a granular type medium.

23. (new) A magnetic recording and reading device according to claim 18, further comprising a rotary type actuator to position the magnetic head in at least two stages.